

## **REMARKS**

This paper is submitted in reply to the Office Action dated September 18, 2006, within the three-month period for response. Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 22-23 were rejected under 35 U.S.C. § 101. Additionally, claims 1-8, 10-18 and 20-23 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,496,945 to Cepulis et al. The Examiner did indicate, however, that claims 9 and 19 were directed to patentable subject matter.

Applicants respectfully traverse the Examiner's rejections to the extent that they are maintained. Applicants have amended claims 1, 3, 11, 13 and 22-23 and added new claims 24-25 herein, and Applicants submit that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed.

As an initial matter, the Examiner will note that new claims 24 and 25 correspond to objected-to claims 9 and 19, rewritten to independent form. Given the Examiner's prior finding of the patentability of claims 9 and 19, consideration and allowance of claims 24 and 25 are respectfully requested.

Now turning to the subject Office Action, and initially to the § 101 rejection of claims 22 and 23, the Examiner will note that Applicants have amended claim 22 to clarify that the computer readable signal bearing medium is "physical" in nature. In addition, claim 23 has been amended to further define the medium as being "recordable". Applicants respectfully submit that the amendments place claims 22 and 23 in a form that is considered statutory by the Office's current guidelines. Withdrawal of the § 101 rejection is therefore respectfully requested.

Next turning to the art-based rejections, and specifically to the rejection of independent claim 1, this claim generally recites a method of booting a computer. The method as amended includes initiating a boot operation, detecting a failure after initiation of and during performance of the boot operation, attempting to identify a source of the failure by initiating a targeted diagnostic operation on at least one hardware device in the

computer that is a potential source of the failure in response to detecting the failure, and completing the boot operation after initiating the diagnostic operation.

Claim 1 therefore describes a method in which during a boot operation, when a failure is detected, a targeted diagnostic operation is initiated on a hardware device that is a potential source of the failure in an attempt to identify the source of the failure, and the same boot operation is thereafter completed.

A targeted diagnostic operation is defined in the specification at page 7 as including "at least an attempt to identify a source of a detected failure, based upon running diagnostic routines on one or more hardware devices that are potential sources of the failure." The specification also indicates that a targeted diagnostic operation may also include "corrective functionality to isolate or otherwise deconfigure a failed hardware device to enable a boot operation to proceed irrespective of the detected failure."

As such, a targeted diagnostic operation has the characteristics of being (1) targeted at a potential source of a failure; (2) diagnostic in nature, i.e., an attempt to identify the source of the failure; and (3) performed in response to detection of a failure.

In rejecting claim 1, the Examiner relies on Cepulis, and in particular, col. 2, lines 23-30 and Fig. 2, blocks 204, 212 and 216. The passage of Cepulis at col. 2, however, merely disclose a boot operation where power on self test (POST) routines are run during boot up to identify failed devices. Fig. 2 describes a different operation that occurs later in the boot process, where a "failed device log" is accessed to omit failed hardware devices from a logical resource map. As described at col. 8, lines 9-26, the failed device log is updated by a CPU during boot up when a failed device is found, using a physical ID associated with the device to identify the failed device in the log. Fig. 2 then describes, starting at line 1 of col. 9, the generation of the logical resource map. The logical resource map (LRM) is essentially created by clearing out any prior copy of the LRM and then stepping through each device ID listed in the failed device log to determine whether that device is still present in the computer. If so, the logical resources associated with that device are tagged in the LRM as not being available (block 212 of Fig. 2). Otherwise, if the device is no longer present in the computer, the device is removed from

the failed device log (block 218 of Fig. 2). As such, when a failed device is uninstalled from the computer, the device will no longer be represented in the log.

The Examiner apparently considers the reading of the failed device log, and the tagging of resources associated with failed devices as not being available, to correspond to a "targeted diagnostic operation." Applicants respectfully submit, however, that these operations do not correspond to a "targeted diagnostic operation" as is recited in claim 1.

First, the operations in Cepulis relied upon by the Examiner are not "targeted" at a hardware device that is "a potential source of [a] failure," as required by claim 1. The routine illustrated in Fig. 2 processes device identifiers of devices that have previously been found to have failed, and creates a logical resource map therefrom. None of these operations, however, are "targeted" toward any particular device that is considered to be a "potential source of [a] failure." In fact, at the point that a device is listed in the log during an earlier boot up operation, that device has already been identified as the source of a failure, so none of the operations performed in Fig. 2 could ever be considered to be targeted to a "potential" source of a failure. As such, the operations disclosed in Fig. 2 of Cepulis fall short of disclosing this recited feature of claim 1.

Second, the operations in Cepulis relied upon by the Examiner are not "diagnostic," and are not directed to "attempting to identify a source of the failure," as also required by claim 1. The routine illustrated in Fig. 2 operates on a failed device log that has already been generated, and thus already identifies devices that have failed. None of the operations performed in Fig. 2 attempt to identify the source of a failure, and none are otherwise "diagnostic" in nature. The principal operations disclosed in the figure are performed in blocks 204, 212 and 218. Block 204 reads a failed device log, an operation that cannot be considered to be "diagnostic" in nature, and that does not attempt to identify a source of a failure, since any device in the log has already been identified as a source of a failure. Block 212 tags logical resources corresponding to failed physical devices, and block 218 updates the log to remove any failed devices that are no longer installed in the computer, operations that are at the most "corrective" in nature, but that are neither "diagnostic" in nature, nor attempts at identifying the source of a failure. As

such, the operations disclosed in Fig. 2 of Cepulis also fall short of disclosing this recited feature of claim 1.

Third, the operations in Cepulis relied upon by the Examiner are not specifically performed "in response to detecting a failure," as is also required by claim 1. The routine of Fig. 2 is performed during each start up operation, and processes each device listed in the failed device log. The failed device log identifies devices that have failed during past boot up operations, as well as those failing during the current boot up operation. Reading the log, and building the logical resource map, are therefore not performed specifically "in response to detecting [a] failure." As such, the operations disclosed in Fig. 2 of Cepulis also fall short of disclosing this recited feature of claim 1.

Applicants can find no other operations in Cepulis that could be considered to disclose the "targeted diagnostic operation" recited in claim 1. In fact, the only operations that could even be considered to be "diagnostic" in nature are POST operations that are used to create the failed device log (e.g., described at col. 2, lines 23-30). However, these operations are not "targeted" as they are performed on all devices, and are not directed to the potential sources of a failure. A POST operation, in fact, is performed on a device before any failure is detected in that device, so the POST operation could not be considered to be targeted at a "potential" source of any already-detected failure, as would be required to anticipate claim 1. Furthermore, these operations are not performed "in response to detecting a failure" since they are run on all devices at start up, and not in response to any particular failure.

As such, Cepulis falls short of anticipating claim 1, and claim 1 is novel over the reference. Withdrawal of the Examiner's rejection is therefore respectfully requested.

Applicants also submit that claim 1 is non-obvious over Cepulis and the other prior art of record, as there has been no objective evidence presented that would motivate one of ordinary skill in the art to modify Cepulis to incorporate the targeted diagnostic operation of the type recited in claim 1. Reconsideration and allowance of independent claim 1, and of claims 2-10 which depend therefrom, are therefore respectfully requested.

Next with regard to independent claims 11 and 22, these claims have been amended in a similar manner to claim 1, and now recite in part attempting to identify a

source of a failure by initiating initiate a targeted diagnostic operation on at least one hardware device that is a potential source of the failure in response to detecting the failure. As discussed above in connection with claim 1, this combination of features is not disclosed or suggested by Cepulis or the other prior art of record. As such, these claims are novel and non-obvious over Cepulis for the same reasons as presented above for claim 1. Reconsideration and allowance of independent claims 11 and 22, and of claims 12-21 and 23 which depend therefrom, are therefore respectfully requested.

As a final matter, Applicants traverse the Examiner's rejections of the dependent claims based upon their dependency on the aforementioned independent claims. Nonetheless, Applicants do note that a number of these claims recite additional features that further distinguish these claims from the references cited by the Examiner.

For example, claims 3 and 13 as presently amended additionally recite that detection of the failure is performed prior to performing a diagnostic operation on the failed hardware device to attempt to identify the source of the failure.. The Examiner relies on the aforementioned operations in Fig. 2 of Cepulis; however, these operations are performed after the source of a failure has already been identified during the POST operations, and as such, these operations cannot be considered to correspond to a diagnostic operation performed after a failure is detected and that attempts to identify the source of the failure.

Claims 7 and 17 additionally recite that the targeted diagnostic operation is initiated in response to a detected failure only for those hardware devices that are potential sources of the detected failure. None of the operations in Fig. 2 of Cepulis is performed only for hardware devices that are considered to be "potential sources" of a specific failure. The operations are instead performed on devices that have already been identified as sources of failures, and in fact, are performed for devices that are all typically associated with different failures.

Applicants therefore respectfully submit that claims 3, 7, 13 and 17 are additionally patentable over Cepulis for the reasons presented above. Reconsideration and allowance of these claims are therefore respectfully requested.

In summary, Applicants respectfully submit that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (513) 241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

December 18, 2006  
Date

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